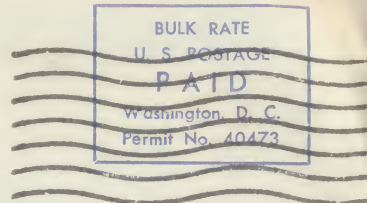


*The Institute for Advanced Technology*  
CDC / C-E-I-R, 5272 RIVER ROAD, WASHINGTON, D. C. 20016



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WHAT TO DO ABOUT  
OPTICAL CHARACTER RECOGNITION

Dear Sir:

Can you evaluate the importance of Optical Character Recognition to your data processing operations? Do you know all you need and want to know about this dynamic new kind of automation?

Input is the most troublesome and expensive aspect of data processing today. Optical Character Recognition is one new tool for solving the input problem. Through OCR, existing operations can be streamlined and new procedures can be made feasible. Key-punching and verification, the weakest link in quality and greatest consumer of routine manual labor in mass data processing, is a most obvious target. It is the richest opportunity to reassign people to more rewarding work and to increase profitability of machinery.

The Institute for Advanced Technology is pleased to present a new seminar, "Optical Character Recognition," in which some of the foremost experts discuss all aspects of optical scanning. OCR will be discussed as a systems tool compared with other input means and examined in terms of successful applications and potentially attractive opportunities.

As with other IAT courses, this new presentation is designed to meet the knowledge needs of technical and administrative professionals and managers. Because of the need to limit class size, two sessions have been scheduled. However, we anticipate that available course space will be fully subscribed well before the actual course dates. To insure your reservation, may I suggest that you register early.

Very truly yours,

*The Institute for Advanced Technology*

*F. J. Karch*  
F. J. Karch  
Director



nition of systems software requirements and application analysis and evaluations. His extensive background includes design and supervision of computer installations, development of computer-to-computer communications program, design and development of general OCR software. He is a graduate of Kansas State University.

**RICHARD MAIHOFFER**, Director of Sales Support, Corporate Marketing, Control Data Corporation, has extensive experience in the industry, including National Program Director for the Postal Service Data System of the Post Office Program, as well as a management seminar instructor. He holds a degree in Engineering from El Camino College.

**BERNARD JOSEPH VINCENT, III**, Manager of OCR Standards for Control Data Corporation, Rainbow Engineering Division, is responsible for USA and ISO standards, government and manufacturer liaison, input media, maintaining marketing support and manufacturer seminars development. He is a member of USASI committee, and Chairman of the OCR Standardization group. He is a graduate of George Washington University.

**REGISTRATION:** Tuition including course materials and luncheons, is \$250 for the first student and \$225 for others from the same organization. Checks for tuition should be made payable to C-E-I-R, Institute for Advanced Technology. Classes will begin at 9:00 a.m. and end at 5:00 p.m. daily.

**HOTEL ACCOMMODATIONS:** Both seminars will be held at the Sheraton-Silver Spring. The hotel will hold a block of rooms for participants until two weeks before the seminar. Costs of hotel rooms are not included in the tuition, but reservations will be made by IAT upon registration if requested. Please use the reply card to indicate accommodations required.

The Sheraton-Silver Spring is a mile from the Capital Beltway at 8727 Colesville Road, Silver Spring, Maryland 20910. Easily accessible to the entire metropolitan area, the hotel is serviced by direct limousine to Washington airports. Free parking is offered to seminar participants. Room rates are \$13.00 for a single and \$18.00 for a twin.

**OTHER COURSES**—The Institute for Advanced Technology covers many subjects in the fields of data processing and the management sciences. Many of these seminars are offered on a private, in-house basis. Fees will be quoted on request. Other seminars currently scheduled are:

- **Management Information Systems**  
October 7-9, Washington, D.C.
- **EDP Personnel Management for the Line Manager**  
October 10-11, Washington, D.C.
- **Microfilm Information Systems**  
October 14-16, New York
- **Data Communications Systems**  
October 16-18, Washington, D.C.
- **Urban Planning — Process & Problems**  
October 17-18, New York
- **Time-Sharing Systems**  
October 21-23, Washington, D. C.
- **Project Planning & Control Systems for Data Processing**  
October 23-25, Washington, D.C.
- **Documentation and Debugging**  
October 28-30, Washington, D.C.
- **Computer Operations Management**  
October 30-November 1, Washington, D.C.
- **Introduction to EDP for Managers**  
October 30-November 1, New York
- **Nonlinear Programming**  
December 2-4, Washington, D.C.

*For an outline of these courses, or to be placed on the mailing list for seminar announcements, write:*

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**C-E-I-R<sup>INC.</sup>**

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Phone: Area Code 301/652-2268

presented by

*The Institute for Advanced Technology*

**C-E-I-R<sup>INC.</sup>**

A SUBSIDIARY OF CONTROL DATA CORPORATION



*Intended for data processing managers, their supervisors and other persons interested in this advanced technology.*

*The seminar will provide the factual information necessary to intelligently determine the possible role of Optical Character Recognition (OCR) in your data processing operation. Course will cover the background and technology of OCR, the current state-of-the-art of hardware and software, cost analysis, conversion and selection of equipment.*

*How to manage an OCR feasibility study will be discussed, including determination of facts, definition of objectives, evaluation of alternatives, establishment of standards, milestone planning, and performance monitoring.*

*Upon completion of the seminar, you will be able to question in detail present methods of source data automation and realistically evaluate recommendations for changing systems and procedures to maximize OCR potential.*

## **1. OPTICAL CHARACTER RECOGNITION BACKGROUND**

Management and Management Systems  
Management Information Systems  
Data Processing Systems  
Output: Control Data for Management  
Input: Raw Material for Data Processing  
Input Techniques — Copying  
Input Techniques — Source Data Automation

## **2. DATA RECORDING FOR OCR**

Devices: Typewriters, Adding Machines, Cash Registers, Imprinters, etc.  
Media: Paper, Forms, Ribbons, Carbons, Type Fonts, Handwriting, Mark Sensing  
Input Quality Control Procedures  
Output Quality Control Techniques

## **3. CURRENT STATE OF THE OCR ART: HARDWARE**

Sensors in General  
Page Readers  
Unit Record Readers  
Peripheral Devices  
Computer Systems  
Communications Devices  
Operating Procedures  
Maintenance and Reliability

## **4. CURRENT STATE OF OCR ART: SOFTWARE**

Systems Approach  
Systems Development and Revision  
Forms Design  
Human Engineering  
Equipment Programming  
Production Engineering  
Documentation  
Management Information

## **5. ANALYSIS OF POTENTIAL OCR COSTS & BENEFITS**

Determining Management's Objectives

Establishing the Facts  
Setting Performance Criteria  
Estimating Return on Investment  
Evaluating the Imponderables  
Reporting the Conclusions  
Planning the Implementation  
Planning the Evaluation

## **6. OPTICAL CHARACTER RECOGNITION TECHNOLOGY**

Communications Theory  
Physical Principles  
Mechanical and Electronic Devices  
Man-Machine Interfaces  
Analysis of Trade-Offs  
Sources of More Technical Information  
Bibliography  
Error Detection and Correction

## **7. OCR EQUIPMENT DEMONSTRATION**

## **8. CASE STUDY**

## **9. MANAGEMENT OF OCR CONVERSION PROJECT**

Stating Requirements  
Surveying Possibilities  
Quantifying Alternatives  
Defining Concepts  
Obtaining Policy Decisions  
Winning Support  
Planning Installation and Operation  
Arranging Training  
Evaluating Results

## **10. SELECTING AND ACQUIRING OPTIMUM EQUIPMENT**

Determining Sources  
Developing Specifications  
Planning Evaluation  
Conducting Bench Mark Tests  
Making Lease-Or-Buy Decisions  
Insuring Contractor Performance  
Hedging Against Failures

**JACOB RABINOW**, Rabinow Engineering Division, Control Data Corporation, holder of basic patents in Optical Character Recognition, graduated from the City College of New York with the degrees BS/Engineering and BS/Electrical Engineering in 1933 and 1934. He was appointed to the National Bureau of Standards in 1938. After a remarkable 18-year career with the Government, he opened his own laboratory in 1951, and joined CDC in 1954. He holds a total of 178 issued patents; others are pending on 50 or so more. He has received numerous high awards for his work and is generally recognized as a worldwide authority on OCR matters.

**ALFRED EISDORFER** is an Executive Associate at Associated Hospital Service of New York. His experience includes organizing and implementing the conversion from a manual to a computerized data processing system. He advanced through the programming levels to Administrative Assistant to the Vice President of Data Processing in 1986 and Executive Associate in January 1988. He has spoken extensively on OCR at many data processing seminars. He graduated in accounting from Long Island University.

**CLYDE C. HEASLY**, Director of Product Management for Control Data Corporation, Rabinow Engineering Division, is responsible for planning, support and programming for OCR products and systems. He was a member of ASA OCR X3 (subcommittee from 1981-1984) and a representative to ISO OCR standardization. A pioneer in OCR technology, he has written numerous technical articles related to the subject. Mr. Heasly has an Electrical Engineering degree from the University of California.

**CHARLES L. DANIEL** is Assistant Director, Logistic Engineering Division, in the office of the Chief of Naval Material. His experience includes the development and installation of a fully integrated MIS, participation in development of the study on data processing needs for the Department of Health, Education, and Welfare. He is a graduate of San Jose State College.

**DERRALD M. GANZ**, OCR Software Development Manager, Rabinow Engineering is responsible for management of development projects including de-

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